

25X1

NPIC/P&DS/D/6-1429  
17 June 1966MEMORANDUM FOR: Executive Director, National Photographic  
Interpretation Center

SUBJECT: Rapid Interpretation Printer-Processor

1. This memorandum contains pertinent information to assist in determining the propriety of purchasing additional units of the subject equipment at this time. The Plans and Development Staff has completed its preliminary evaluation of the prototype model RIPP-101 Rapid Interpretation Printer-Processor built by the [REDACTED] Due to time restrictions, we were not able to evaluate the prototype equipment against all of the specifications (copy attached) which will be required of the production models nor was the contractor able to make all of the necessary modifications which would be incorporated in production models. If production models are purchased, the Equipment Performance Section, Development Branch, will test each unit against these specifications.

25X1

2. In response to operating difficulties encountered during the first evaluation of the Rapid Interpretation Printer-Processor, the Contractor modified the unit and returned it to NPIC on 26 May 1966. The chain drive which had been a persistent cause of failure has been improved on the modified unit and has not failed since its installation. However, some elastomeric components failed after 600 hours of operation and caused several copies to jam in the unit. Specifications for the units to be purchased require a minimum of 200 hours of trouble free operation for each unit and an average of 400 hours before acceptance. With periodic preventative maintenance by trained maintenance technicians, the new units should provide reasonably satisfactory mechanical performance.

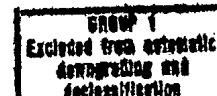
3. Results of a test by [REDACTED] of our staff indicated that this unit is capable of producing copies with a maximum density of 1.9, minimum density of 0.05, a gamma of 2.0 and a resolution of 200 lines per millimeter. The maximum useful dynamic range is reached at an input contrast ratio of 30 to 1.

25X1

4. A test for ammonia concentration was conducted under the supervision of [REDACTED] of our staff. The concentration as measured at various locations in a room in which the unit was operating did not exceed 20-30 parts per million. This is below the tolerance level of 100 parts per million as specified by industrial standards. When the

25X1

CONFIDENTIAL



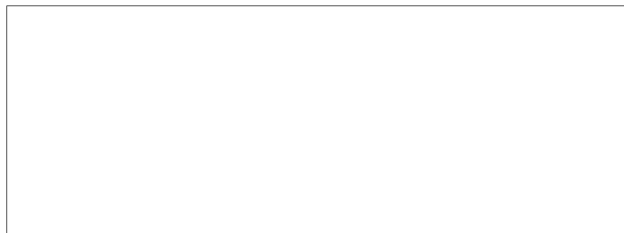
~~CONFIDENTIAL~~

safety features described in the attached specifications are incorporated, the unit will be safer to operate. However, all operating personnel should be alerted to the hazards involved and should learn to recognize the symptoms of overexposure to ammonia fumes. In addition, only properly instructed individuals should be permitted to change ammonia bottles or to regulate ammonia pressures on the unit. The Plans and Development Staff has ordered instrumentation for measuring the concentration of ammonia in air and expects to make frequent checks on all NPIC equipment using ammonia to assure their safe operation.

5. The Plans and Development Staff does not object to the purchase of the Model RIPP Rapid Interpretation Printer-Processor as described in the attached specifications providing that it is recognized that safety precautions must be exercised in the operation of the equipment and that more than average maintenance and down time can be expected. This maintenance may be of such a nature that it cannot be performed by operating personnel and will probably require trained maintenance technicians or factory representatives.

6. The Plans and Development Staff views this equipment as a prototype which is not considered to be optimum in design. We feel that more satisfactory units can be developed with further effort and are incorporating approaches to meet this requirement in the FY-1967 budget.

25X1



Colonel, USAF  
Assistant for Plans and Development, NPIC

Attachment:

Specifications of Subject dated  
7 June 1966

Distribution:

Original and 1 - Addressee  
1 - NPIC/Asst. for Ops  
1 - NPIC/SS/LB  
3 - NPIC/P&DS/DB

~~CONFIDENTIAL~~

7 June 1966

## SPECIFICATIONS FOR RAPID INTERPRETATION PRINTER-PROCESSOR

1. General

- 1.1 This specification covers the requirements for a Rapid Interpretation Printer-Processor.
- 1.2 Printer-Processors are to be identical to the unit delivered under [ ] except for modifications listed in this specification.

25X1

2. Items Required

- 2.1 The following items are required by the Government:
- 2.1.1 Printer-Processor delivered under [ ] to be modified according to the specifications listed herein.
- 2.1.2 Five Printer-Processors to be fabricated according to the specifications listed herein.
- 2.1.3 If fuses are used, one extra fuse of each type to be provided for each Printer-Processor.
- 2.1.4 One full tank of ammonia and one full chamber of unused desiccant to be provided with each Printer-Processor.
- 2.1.5 Ten copies, Operations Instruction Manual.
- 2.1.6 Ten copies, Maintenance Manual.

25X1  
25X13. Government Furnished Equipment

- 3.1 One Printer-Processor delivered under [ ] will be supplied for modification.

25X1  
25X1

- 3.2 Five Richards GFL-940 MCE Light Tables.

4. Printer-Processor Modifications

- 4.1 The following modifications apply to all six Printer-Processors to be supplied.
- 4.1.1 A resettable elapsed time-recording meter to record running time of the processor.
- 4.1.2 An improved ammonia flow control to provide reliable ammonia regulation. All gauges positioned to permit front viewing.

- 4.1.3 An improved water control system to provide positive control of the water level within the processing chamber. An indicator alerting the operator when the water level is below an acceptable minimum and an automatic valve to simultaneously turn off the ammonia.
- 4.1.4 An indicator alerting the operator when the desiccant has expended between 70 to 90 percent of its ability to remove ammonia from the plenum chamber gases.
- 4.1.5 A miniature light source in the printer light box to provide sufficient illumination for aligning the area to be copied with the copy material.
- 4.1.6 An exposure indicator lamp to indicate when an exposure is being made.
- 4.1.7 Storage container for the material located in a vertical position on the rear of the control panel.
- 4.1.8 All labels epoxy silk-screened.
- 4.1.9 Entrance port to the processor tapered and widened to permit easier insertion of the exposed material.
- 4.1.10 A resettable counter to indicate the number of exposures made.
- 4.1.11 A pressure gauge to display the pressure in the ammonia storage tank.
- 4.1.12 Location of the film notch for proper exposure on the glass exposure surface.
- 4.1.13 Improved drive mechanism within the processing chamber.
- 4.1.14 Reduced processor warm-up time and power requirements.
- 4.1.15 An extension of covering surrounding the ammonia bottle to prevent the bottle from being accidentally bumped.
- 4.1.16 Forced ammonia agitation within the processing chamber.
- 4.1.17 Modifications to latch on lid to prevent it from breaking exposure surface if lid is accidentally dropped.
- 4.1.18 All low pressure tubes and fittings containing ammonia must withstand at least 10 psig pressure without leakage.
- 4.1.19 The contractor may suggest other modifications that will improve the performance of the unit. The Contract Officer's technical representative must give approval to any changes not listed herein.

4.2 The following modifications apply to only one of the Printer-Processors.

4.2.1 One unit will be capable of using 220-240 volt, 50 cycle power supply. A standard 220-240 plug to be supplied by the contractor.

4.2.2 All other modifications listed herein will apply to this unit.

5. Test of Five Rapid Interpretation Printer-Processors

5.1 After delivery, the Government will test each unit before final acceptance.

5.2 The time-recording meter on each unit must be accurate to within  $\pm 5\%$  as measured during any twenty-four hour period. For the purposes of this test each unit's time meter will be used to measure the length of time each unit is in operation.

5.3 Each unit must operate a minimum of 200 hours before needing maintenance. If a unit fails or needs repeated adjustment, before the 200 hour period, its time of failure will be recorded and repairs will be made by the contractor. The unit will be started again and will attempt to operate 200 hours as measured from the time of the last repair. If, at the end of the 90 day period after receipt of equipment, any unit has not run for 200 hours or longer before needing maintenance, it will not be accepted by the Government. If the minimum at that time is less than 200 hours, an additional 90 day test period may be run at the discretion of the Government.

5.4 The six units must operate for an average of at least 400 hours before needing maintenance. This average will be taken 90 days after receipt of equipment. If the average at that time is less than 400 hours, an additional 90 day test period may be run at the discretion of the Government.

5.5 With each unit placed in a room of at least 2000 cubic feet, in which the air is completely replaced every 20 minutes, it must not cause a concentration of ammonia greater than 100 parts per million to exist during normal operation.

5.6 The minimum water level indicator light and automatic shut-off must be demonstrated satisfactorily at least four times.

5.7 The visual desiccant indicator must show color change at least once during test.

~~CONFIDENTIAL~~

- 5.8 In all respects, each unit must perform at least as well as the unit delivered under previous contract before the modifications under paragraph 4 are completed. The resultant copies must be of at least the same quality as those produced from the previously delivered unit. Within any given single copy the unit must demonstrate a resolution in excess of 200 lines per millimeter, 1.80 maximum density and 0.05 minimum density.
- 5.9 At the discretion of the Government, failures of light bulbs, fuses, and similar components, where used within the specified ratings of the components, need not be considered as a failure for purposes of the acceptance test. A continuing failure of replaced components will be considered to be the fault of the unit's construction.
- 5.10 At the discretion of the Government, an occasional (less than one per 200 copies) jam of a copy in the processor need not be considered as a failure providing it can be removed and the unit put back in operation within fifteen minutes.
6. Maintenance
- 6.1 The contractor must provide 90 day period of free maintenance for each unit (commencing on the date each unit is accepted by the Government). The contractor must pay for wages, parts, travel and all other expenses. The contractor must provide such service within forty-eight hours after receipt of a verbal request by the Government.
- 6.2 The contractor must provide an additional nine month period of Government reimbursed maintenance for each unit (commencing on the date the maintenance period described in 6.1 is completed). The Government will bear all expenses for this service. The contractor must provide such service within ninety-six hours after receipt of a verbal request.
7. Delivery
- 7.1 Delivery to commence within fifteen weeks after receipt of five GFE Richards GFL 940 MCE Light Tables. At least one unit per week to be delivered thereafter.
- 7.2 The unit capable of 220-240 volt, 50 cycle operation to be the third unit delivered. This unit will be one of the five new units to be supplied. It must not be made from the unit delivered under previous contract.
- 7.3 The Government will furnish the previously delivered unit to the contractor for modification within five weeks after receipt of the first unit delivered under this contract. The contractor will modify it to conform the specifications listed under Paragraph 4.1 and return it within three weeks of its receipt.

~~CONFIDENTIAL~~